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Global Sustainable Development Report 2016: summary for policymakers

Note by the Secretariat

The Secretariat has the honour to transmit to the high-level political forum on sustainable development convened a summary, prepared for policymakers, of the *Global Sustainable Development Report 2016*.

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Global Sustainable Development Report 2016: summary for policymakers

1. The present document is an executive summary of the *Global Sustainable Development Report 2016*.[1] Building upon the 2014 and 2015 reports, the latest report responds to the mandate given at the United Nations Conference on Sustainable Development to contribute to strengthening the science-policy interface for sustainable development in the context of the high-level political forum on sustainable development.

2. The preparation of the report involved an inclusive, multi-stakeholder process drawing upon scientific and technical expertise from inside and outside the United Nations. A total of 245 scientists and experts based in 27 countries, including 13 developing countries, contributed to the report, 62 policy briefs were submitted in response to an open call and 20 agencies, departments and programmes of the United Nations system contributed to the report with input, comments, suggestions or revisions.

3. Major international conferences and summits in 2015 — on financing for development, sustainable development and climate change — have defined a new sustainable development agenda for the coming 15 years. At all levels, from global to local, attention is turning towards implementing this ambitious agenda. This is the context in which the *Global Sustainable Development Report 2016* appears.

4. Given the adoption of the 2030 Agenda for Sustainable Development and its Sustainable Development Goals, the report adopts the Goals as its scope. True to its mandate, the report is designed as an assessment of assessments. It endeavours to present a range of scientific perspectives and to be policy-relevant but not policy-prescriptive. Just as its predecessors, it continues to explore possible approaches and vantage points from which to examine the science-policy interface, as well as scientific approaches that can inform policies, building upon the integration of and interlinkages between sustainable development goals, sectors and issues.

5. The report was prepared specifically to inform the discussions at the high-level political forum on sustainable development in 2016. The theme chosen for the forum in 2016 is "Ensuring that no one is left behind". This theme is a recurring thread in the report. The first chapter asks what "ensuring that no one is left behind" means in relation to the 2030 Agenda and provides a frame for other chapters of the report. Those chapters provide specific examples of how the inclusiveness imperative may have an impact on the delivery of the Agenda, through an examination of the nexus of infrastructure, inequality and resilience (chap. 2) and through the cross-cutting dimensions of technology (chap. 3) and institutions (chap. 4). As a critical dimension of the science-policy interface, the report also explores ways in which new and emerging issues identified by science could be screened and analysed for the benefit of the forum and its mandate to provide high-level guidance on sustainable development.

Leaving no one behind and the 2030 Agenda

6. Ensuring that no one is left behind is a fundamental guiding principle for the implementation of the 2030 Agenda. In implementing the Agenda, countries and

[1] See http://sustainabledevelopment.un.org/globalsdreport.

stakeholders will have to make choices regarding where, when and how to act. In that process, they have pledged to endeavour to reach the furthest behind first. Fifteen years from now, when this generation and the next together assess the implementation of the Agenda, a key measure of success will be the extent to which it has allowed for improvement in the lives of the poorest and most vulnerable, regardless of gender, race, age, religion, place of residence or any other factor. Many organizations have begun work on the implications of the call to leave no one behind for the delivery of the Agenda and for their missions.

7. Given the importance of this notion in the 2030 Agenda, it is critical that some clarity exist on its implications for implementing the Agenda. At the conceptual level, three main questions need to be addressed. First, who are those being left behind or at risk of being left behind? Second, how can strategies and policies reach them in practice? Third, what types of strategies and policies would be appropriate in order to leave no one behind? Science can inform decision-making on these three broad questions. Through this, it can also provide elements to assess how ambitious and challenging it will be to realize the commitment of leaving no one behind, by revealing to what extent strategies and policies that have been used in various Sustainable Development Goal areas are aligned with this objective and what their success has been in achieving it.

8. The ambition to reach the furthest behind first is a transformative aspect of the 2030 Agenda. Does this imply different implementation strategies than those commonly used in the past? What could it mean for important cross-cutting dimensions, such as institutions, and for the way technology is managed? Here also, scientific evidence can inform the debate.

9. The first chapter of the report explores the implications of leaving no one behind for the operationalization of the Sustainable Development Goals from a science-policy perspective. It examines what "ensuring that no one is left behind" means in relation to related concepts that are prominent in the 2030 Agenda for Sustainable Development, such as inequality and inclusiveness. It reviews some of the concepts and methods used to identify those left behind and to reach them in practice. Lastly, it highlights examples of development strategies used in various areas of sustainable development and what evidence tells us about their effectiveness in leaving no one behind.

10. Many Sustainable Development Goals and targets directly relate to leaving no one behind and refer to specific objectives and actions, as well as groups — of countries or people — that should be the object of sustained attention in this regard. This is particularly the case with the Goals that were within the scope of the Millennium Development Goals, including those relating to poverty, gender, education, health and means of implementation. In those areas, considerations regarding inclusiveness in a broad sense have long been part of the main development discourse and practice, and action and policies to address this dimension have become part of the standard development apparatus.

11. Many criteria can be used to identify those left behind, whether entire countries or people within countries. In practice, those left behind with respect to a particular dimension of the 2030 Agenda may be different groups in different societies. In addition to references to specific groups, including women, indigenous peoples, persons with disabilities and youth, and deprivation indicators focused on single areas or sectors, many indices of multiple deprivation exist, which

incorporate social, economic and environmental indicators. For example, the Multidimensional Poverty Index published by the United Nations Development Programme incorporates 10 weighted indicators that measure education, health and standard of living. This and similar composite indicators were created in response to the growing concern over the multiple dimensions of poverty. Deprivations tend to be spatially concentrated, and policies concerned with leaving no one behind therefore need to take geography into account. In this regard, multiple deprivation maps based on composite indicators have been used as instruments for planning and management at various levels, from the national to the subnational and local levels, both in developed and developing countries.[2]

12. In many areas, inclusive development strategies are the commonly accepted paradigm. Examples include the areas of drinking water, electricity and other basic services, for which ensuring universal access is often an overarching objective, as now reflected in the Sustainable Development Goals. However, whether strategies succeed in reaching those left behind depends on many factors, from country-specific circumstances to their design, targeting methods and practical implementation. Various targeting methods have been used to reach those left behind. All require underlying data systems to be implemented together with administrative capacity in various institutions. Available evaluations from different Goal areas all suggest that there are significant practical challenges in effectively reaching those left behind. For example, self-targeting strategies to identify the beneficiaries of food subsidies may impose costs on the recipients, such as the transportation costs involved, or may cause social stigma.[3]

13. Examples of interventions reviewed for the report that aim to reach the furthest behind first include: nutrition, for which the core target for interventions in developing countries is those suffering the most from stunting; area-based interventions targeting the poorest locations; and strategies to provide shelter for homeless people.

14. A strong message is communicated in chapters 1 to 4, even though their topics are very different and the scientific communities involved in each of them are distinct: if no one is to be left behind in 2030, the notion of inclusiveness cannot be treated as an afterthought or even mainstreamed in other areas. Rather, it should be an integral part of institutions' design and functioning, of research and development and of infrastructure planning and development.

15. Based on the limited evidence reviewed in the report, over the coming 15 years, the goal of leaving no one behind in sustainable development interventions may not present insurmountable difficulties in many areas covered by the 2030 Agenda. Endeavouring to systematically reach the furthest behind first may represent a much greater challenge and may, in some cases, imply a more significant departure from present strategies. That endeavour is likely to require attention at three levels. First, better taking into account the interests of those left behind will require assessing the way in which strategies and policies are designed. This in turn

[2] For an application at the provincial level in South Africa, see www.statssa.gov.za/?page_id=3895. For an application at the municipal level in the United Kingdom of Great Britain and Northern Ireland, see http://gov.wales/docs/statistics/2015/150812-wimd-2014-revised-en.pdf and www.sheffield.gov.uk/your-city-council/sheffield-profile/deprivation-statistics.htm.

[3] David Coady, Margaret Grosh and John Hoddinott, *Targeting of Transfers in Developing Countries: Review of Lessons and Experience* (Washington, D.C., World Bank, 2004).

may require the incorporation of an enhanced understanding of the dynamics of poverty, marginalization and vulnerability in a country-specific and place-specific context. This may also involve ways to give more of a voice to deprived or marginalized groups in policy discussions and decision-making processes. The institutional dimension is clearly crucial in this, as argued in chapter 4 of the report. Second, there will be a need to review, and possibly update, the ways in which strategies are executed, with particular efforts made to reach the furthest behind, addressing gaps in administrative capacity and data to improve the targeting of programmes. Third, at the highest level of government decision-making, taking the 2030 Agenda at its word will require a consideration of how social objectives are balanced with other objectives, such as short-term economic efficiency. Ultimately, the priority given to those furthest behind will be reflected in the allocation of resources, from both the public and the private sectors.

16. Going forward, it will be critical to systematically collect further scientific evidence on how existing development strategies do indeed reach the furthest behind. A first step could be an inventory of existing metastudies that attempt to review the effectiveness of development interventions in areas covered by the Sustainable Development Goals in reaching those left behind. While evaluations do exist for specific Goal areas, they use different criteria for defining and measuring those left behind or furthest behind and for assessing the effectiveness of interventions in reaching them. It could be useful to assess the costs and benefits of investing in more comparable frameworks for evaluating development interventions in different Goal areas. This would likely be a significant undertaking in terms of methodology and cost.

Nexus approach: the infrastructure-inequality-resilience nexus

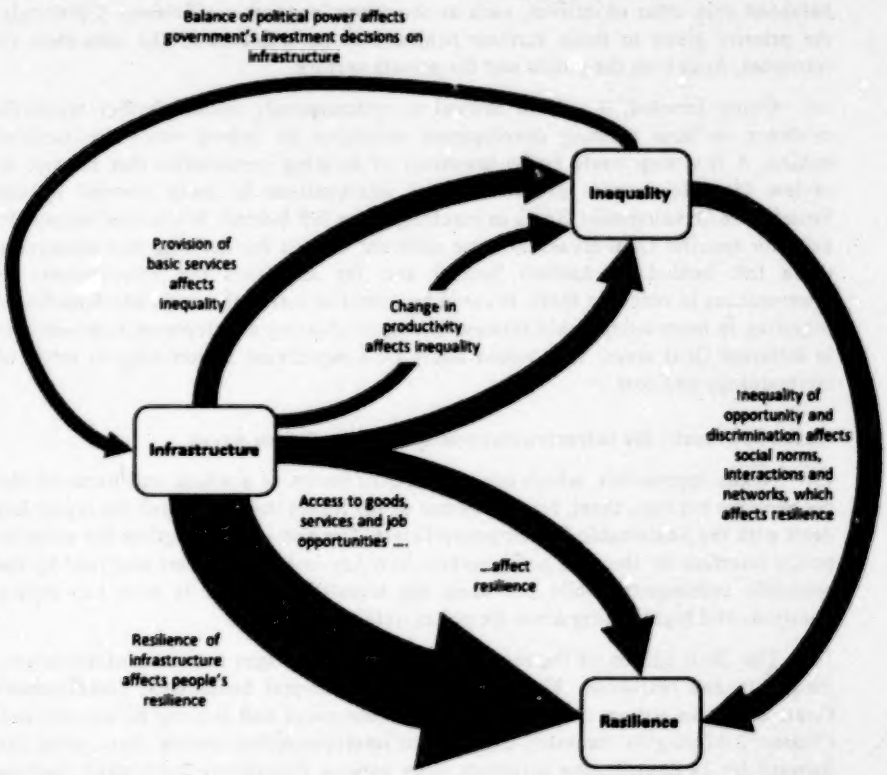
17. Nexus approaches, which examine sets of issues as a whole and focus on the connections between them, have been one of the lenses through which the report has dealt with the Sustainable Development Goals. The aim is to strengthen the science-policy interface by showing policymakers how key interlinkages are analysed by the scientific community, while providing the scientific community with key policy questions and highlighting areas for policy-relevant research.

18. The 2016 edition of the report examines interlinkages between infrastructure, inequality and resilience. These areas relate to several Sustainable Development Goals and have strong connections with inclusiveness and leaving no one behind. Chapter 2 highlights the main channels of interconnection among these areas put forward by 24 contributing scientists from various disciplines and United Nations experts, in addition to providing a review of findings from several hundred publications. Extensive bodies of literature have focused on each of these areas. For example, the area of infrastructure has received significant attention in development circles, owing to its perceived critical role in spurring economic growth and development. However, scientists focusing on each of those fields typically hail from different communities, making links between the three areas less commonly studied than any of the three areas taken in isolation.

19. Some of the interlinkages in the nexus have received much more attention from scientists than others. This is illustrated in figure I, which summarizes in a simplified way the key interlinkages that emerged from the analysis. Areas that are well covered by scientific research are the links between infrastructure and

inequality, and how people's resilience is affected separately by inequality and by the resilience of infrastructure to natural disasters. By contrast, although the report received input from experts from a broad range of disciplines, linkages in which the causal relation runs from resilience to inequality and from resilience to infrastructure were dealt with only very marginally or not covered at all. Further research in these two areas may be needed to document important linkages, synergies and trade-offs.

Figure I
Evidence map of the infrastructure-inequality-resilience nexus


Balance of political power affects government's investment decisions on infrastructure
Inequality
Provision of basic services affects inequality
Change in productivity affects inequality
Inequality of opportunity and discrimination affects social norms, interactions and networks, which affects resilience
Infrastructure
Access to goods, services and job opportunities ....
...affect resilience
Resilience of infrastructure affects people's resilience
Resilience

Source: Authors' elaborations based on input by experts and literature review.

20. The interlinkages identified by experts and described in figure I can be summarized as follows. Infrastructure affects inequality through three main channels: the provision of basic services such as water, sanitation and electricity; broad (macro-level) increases in productivity that result from the presence of infrastructure such as irrigation, electricity, information and communications technology and roads; and (micro-level) effects of infrastructure on people's access to goods, services and job opportunities. In general, the literature has found a

positive relationship between infrastructure provision and reduced inequality.[4] However, the specific channel or combination of channels through which this occurs is complex, as shown by the large number of econometric, microeconomic and other empirical studies on those channels.[5] Inequality is affected by the quality, design, coverage, accessibility and distribution of infrastructure. Key elements in this regard are where infrastructure is located and whom it is intended to benefit.

21. Inequality affects infrastructure through its effect on the balance of political power, which in turn affects government decisions on the provision of infrastructure. That may result in a disproportionately low share of investment being directed to infrastructure that benefits the most disadvantaged, reinforcing and perpetuating social and spatial inequalities.[6] Breaking that vicious cycle may be critical for the implementation of the 2030 Agenda.

22. The effect of infrastructure on resilience is an area of the nexus that has received much attention by the scientific community. In particular, the literature has focused on how the quality, design, distribution, interrelation and operation of infrastructure affect its resilience to natural disasters, which in turn influences people's resilience to shocks. There is considerable information about resilience to more predictable and lower-intensity events, but much less on how to make infrastructure resilient in the case of more severe disasters.[7] There is also a significant body of research on critical infrastructure, such as transport networks and electricity infrastructure, which are particularly vulnerable to chain reaction effects during crises.[8]

23. Inequality of opportunity and discrimination affect resilience through their impact on social norms, interactions and networks, which have an effect on people's ability to adapt to shocks. In that context, vulnerable populations are usually the most severely affected. Much of the research focuses on the role of social capital in building resilience.[9] Nevertheless, in general, this interlinkage appears to have received less attention from the scientific community than others in the nexus.

24. In any nexus, harnessing synergies and addressing trade-offs are critical for policymaking. In this regard, contributing experts have noted that reducing inequality in any of its dimensions also contributes to better infrastructure provision and increased resilience by, for example, increasing the likelihood of infrastructure

[4] Examples of the literature include: César Calderón and Alberto Chong, "Volume and quality of infrastructure and the distribution of income: an empirical investigation", *Review of Income and Wealth*, vol. 50, No. 1, (March 2004), pp. 87-105; and Dulani Seneviratne and Yan Sun, "Infrastructure and income distribution in ASEAN-5: what are the links?", International Monetary Fund Working Paper, No. WP/13/41, (International Monetary Fund, February 2013), available from www.imf.org/external/pubs/ft/wp/2013/wp1341.pdf.

[5] For example see Sumedha Bajar and Meenakshi Rajeev, "The impact of infrastructure provisioning on inequality: evidence from India", Global Labour University Working Paper, No. 35.

[6] For example see Daniel Albalate, Germà Bel and Xavier Fageda, "Beyond the efficiency-equity dilemma: centralization as a determinant of government investment in infrastructure", *Papers in Regional Science*, vol. 91, No. 3, (August 2012), pp. 599-615.

[7] For example see Miguel Esteban, Hiroshi Takagi and Tomoya Shibayama, *Handbook of Coastal Disaster Mitigation for Engineers and Planners* (Oxford, Elsevier, 2015).

[8] For example see Ana Laugé, Josune Hernantes and Jose Sarriegi, "Critical infrastructure dependencies: a holistic, dynamic and quantitative approach", *International Journal of Critical Infrastructure Protection*, vol. 8 (January 2015), pp. 16-23.

[9] See Daniel P. Aldrich, *Building Resilience: Social Capital in Post-Disaster Recovery* (Chicago, University of Chicago Press, 2012).

investment that benefits vulnerable groups.[10] In relation to infrastructure policies, a focus on both efficiency and equity is needed to harness the synergies in the nexus. An important policy component is geographic equity in the provision of basic service infrastructure. To increase synergies between infrastructure and resilience, regulatory and incentive mechanisms must be in place to integrate disaster risk reduction into all phases of the infrastructure life cycle and to ensure the resilience of critical infrastructure to natural disasters. It has been suggested that participatory processes that involve local communities and their various segments can be useful ways to ensure that considerations relating to economic, social and environmental dimensions are taken into account when planning for infrastructure investment.

25. Contributing experts noted a need to further disaggregate the analysis between rural and urban contexts to be able to provide more specific policy recommendations. In rural areas, infrastructure investments are essential to connect individuals to livelihoods and opportunities. Urban areas provide easier connectivity, but tend to present challenges such as fragmented governance structures, congestion and high disparities in access to services, especially in informal settlements and peri-urban areas.[11] The report provides examples of policies that have been found to address synergies within the nexus. For example, labour-based programmes in infrastructure projects can expand job opportunities and reduce inequalities while improving resilience to natural disasters.[12]

26. Further cross-disciplinary collaboration and engagement between researchers, practitioners, decision makers and other stakeholders could be a way of achieving the mutual learning and transfer of information that would enable scientific knowledge to be transformed into practical strategies to harness the synergies — and address the trade-offs — between the three areas of the nexus.

Perspectives of scientists on technology and the Sustainable Development Goals

27. Chapter 3 of the report presents a range of perspectives of scientists on the role of technology for the achievement of the Sustainable Development Goals. Understanding that role is critical because technology has greatly shaped society, the economy and the environment, and vice versa. In fact, technology, society and institutions co-evolve. Progress in technology therefore requires institutional adaptations and may be constrained by social issues. Policy actions to achieve the Goals and ensure that no one is left behind must consider these interlinkages.

28. Technology is essential for achieving the Goals and reaping the benefits of synergies among them, as well as for minimizing trade-offs among the Goals. The importance of technology is widely appreciated, as reflected by the significant emphasis laid on it in the Goals and targets. Indeed, not only is technology captured in Goal 17 as a key means of implementation, but also, of the 169 targets, 14

[10] See C. Venter, V. Vokolkova and J. Michalek, "Gender, residential location and household travel: empirical findings from low-income urban settlements in Durban, South Africa", *Transport Reviews*, vol. 27, No. 6 (October 2007), pp. 653-677.

[11] For examples see Roy W. Bahl and Johannes F. Linn, *Governing and Financing Cities in the Developing World*, Policy Focus Report, (Cambridge, Massachusetts, Lincoln Institute of Land Policy, 2014); and United Nations Human Settlements Programme, *Planning and Design for Sustainable Urban Mobility: Global Report on Human Settlements 2013* (Nairobi, 2013).

[12] See International Labour Organization, *Building Rural Roads* (International Labour Organization Regional Office for Asia and the Pacific, 2008).

explicitly refer to technology, and many others relate to issues that are often discussed largely in technological terms. In general, the targets most closely related to technology fall into three categories: those that relate to significant overall technology performance improvement; targets for universal access to specific technologies; and targets that delineate elements of effective global innovation systems for sustainable development. The technology-related targets are much less quantitative than the corresponding targets proposed in the scientific literature.

29. While technology offers solutions to many sustainable development challenges, it also has continuously added new challenges. In particular, technological change can be a source of conflict or a tool for social inclusion and greater cooperation. In addition, all technologies consume resources and may use land and pollute air, water and the atmosphere, albeit to varying degrees. Examples of relatively new technologies considered in the report that illustrate these two facets of technological change include digital automation, nanotechnology, biotechnology and genomics, and synthetic biology. These technologies are becoming driving forces for science, research and, increasingly, economic activity. All hold great promise in terms of improving well-being and solving development challenges, but all present possible challenges.

30. For example, technology gaps exist in all sectors, and their nature and severity in terms of being a constraint to development differ greatly. New gaps often emerge alongside new technologies, such as the use of big data, the Internet of things, 3D printing, mass online open courses and digital automation. All could have wide-ranging implications that increase, rather than decrease, existing inequalities. While such technologies are in an embryonic stage, it is important for countries to understand them, identify their potential implications and use foresight activities to guide policy planning exercises.

31. Chapter 3 provides an overview of the perspectives of scientists on technology and the Goals. It synthesizes contributions from 57 scientists and experts with research affiliations in 20 countries, representing more than 40 sustainability science disciplines, who were asked what were the most promising actions or policy elements for an optimal leveraging of technology for the Goals and leaving no one behind, and which technologies and what level of their performance and deployment would be most crucial leading up to 2030.

32. Many submissions received from scientists for the report pointed to a need to make simultaneous progress on issues relating to equity, especially in access to technology, on overall technology system performance and on supporting institutional change. Strategies focusing on only one of these components have proved ineffective in the long run. Policy actions must support both research and development to spur technology performance at the technology frontier, as well as promote the diffusion and adaptation of existing technologies in developing countries and among marginalized groups in all countries. One supports the other, and vice versa.

33. Effective technology policies differ by country and depend on the country's level of diversification and technological capabilities. Policy actions on technology are most effective when they are firmly grounded in scientific knowledge and take into account the complexities of technological change and technology transfer and dissemination and the unique circumstances of the country in question. If only one or the other of these elements is supported, innovation systems, understood as the

network of institutions in the public and private sectors whose activities and interactions initiate, import, modify and diffuse new technologies, perform suboptimally. Policy actions must support both incremental and gradual technological and institutional improvements, as well as radical, Schumpeterian "gales" of "creative destruction". Both are necessary — one requires the other. In this regard, education and infrastructure are essential prerequisites for technological change.

34. Scientists who contributed to the report proposed policies and actions for technology to support the realization of the Goals that typically encompassed not just one but several of the following areas: research, development and demonstration; technology transfer and diffusion; the establishment of goals, targets and mandates for specific technologies or technology systems (including the mandating of a minimum share of renewable power generation); policy environment and market incentives; knowledge-sharing and capacity-building; and stakeholder participation and governance. They tended to highlight policies and actions far outside their own disciplinary expertise, which illustrates the relevance of taking into account integrated systems in addressing the issue of technology in the context of the 2030 Agenda.

35. Scientists emphasized a need for national and international action plans and technology road maps. Promising technological trajectories and new industries can be identified by each country. Scientists suggested the importance of simultaneously investing in new and old technologies; in increased performance of advanced technologies and technology adaptations for underserved communities; in large-scale infrastructure projects and small-scale granular technologies. They also suggested that science road maps should include measures relating to affordability and inclusion, which should be built into research and development processes from the outset. Other notable key actions or policy elements suggested by scientists included: effective national science-policy interfaces; foresight and scenario planning; the facilitation of learning across communities, including underserved communities; and cluster analysis. The latter analyses networks of firms linked to one another (whether linked through production chains, those geographically concentrated that make use of related buyers, suppliers, infrastructure and workforce, or those of a similar nature), with a view to addressing the systemic imperfections of innovation systems.

36. Looking towards 2030, scientists identified emerging technologies crucial for the achievement of the Goals, which fall into the biotechnology, digital technology, nanotechnology, neurotechnology and green technology categories. However, little information appears to exist on the level of performance and deployment of these technologies that would need to be achieved by 2030. While some quantifications exist in this regard, further collaboration on Goal scenarios and road maps that explicitly incorporate technology will be essential. Long-term technology road maps can support business development and policy planning.

Inclusive institutions: the example of national councils for sustainable development and parliaments

37. There is a clear awareness that an understanding of institutions is important for delivering on the imperative to leave no one behind. Institutions are essential enablers of inclusiveness, although they are not the only ones. The 2030 Agenda does not prescribe institutional models for the national level, but outlines

governance principles that institutions should strive to implement, such as effectiveness, inclusiveness and accountability (see Goal 16), responsive, inclusive, participatory and representative decision-making at all levels (see target 16.7) and policy coherence (see target 17.14).

38. Institutions can trigger behaviour and trends that can have positive or negative impacts on development outcomes, in particular in terms of inclusiveness. Inclusive institutions bestow equal rights and entitlements and enable equal opportunities, voice and access to resources and services. They can be based on principles of universality (such as universal access to justice or services), non-discrimination (for example, inheritance laws that protect widows' land rights) or targeted action (for example, affirmative action to increase the proportion of women political representatives). On the other hand, power holders can shape institutions for the benefit of some rather than all groups of society. Institutions that are not inclusive potentially withhold rights and entitlements, undermine equal opportunities, voice and access to resources and services and perpetuate economic disadvantage. They can also have a negative impact on the non-economic dimensions of poverty, including through a lack of access to services, a lack of voice in decision-making and vulnerability to violence and corruption.

39. From a science-policy perspective, a natural question to ask is what types of institutions are necessary for achieving inclusive goals. Achieving any particular target will require a combination of factors, including legal and regulatory components; multiple institutions intervening at various levels; and potentially broader social changes, such as in social norms, which themselves can be spurred by changes in institutions. For example, the advancement of gender equality requires a range of actions at all these levels and the intervention of a range of institutions with different mandates and purposes. Conversely, individual institutions, especially those with broad mandates, can contribute to inclusiveness in many different areas and society-wide. It is important to assess both how inclusive institutions are, and whether and how they foster inclusiveness through their actions. In this vein, the report explores two specific types of institutions: national councils for sustainable development and national parliaments. A more in-depth assessment of the research is needed on other types of institutions and how they contribute to inclusiveness in the context of the 2030 Agenda, and this should be a critical component of future reports.

40. National councils for sustainable development were first identified as important institutional components in 1992, in Agenda 21. Over the past two decades, many countries have experimented with versions of such councils, with varying levels of success.[13] Lessons learned from that phase can be useful for the implementation of the 2030 Agenda. The research reviewed for the report suggests that, if provided with adequate resources, such councils can be effective mechanisms for stakeholder participation and engagement across the entire policy cycle, in order to: (a) inform and educate the public at large on topics relating to sustainable development; (b) stimulate informed public debates; (c) involve key

[13] Today, the number of national councils for sustainable development and similar bodies has exceeded 100 worldwide, with a wide variety of forms and functions. For examples, see Derek Osborn, Jack Cornforth and Farooq Ullah, "National councils for sustainable development: lessons from the past and present" (Stakeholder Forum, 2014), available from www.iisd.org/sites/default/files/publications/sdplannet_lessons_from_the_past.pdf.

stakeholders in formulating policy recommendations; and (d) involve stakeholders in various parts of implementation and progress reviews. In practice, government attitudes regarding stakeholder involvement influence the functioning of the councils and the resources provided to them. The composition of such councils usually reflects the political system and culture in which they exist. In general, the more the council is dominated by the Government, the more the communication of government policy to various stakeholders is its main role. The more independent the council, the greater the role it tends to play in the decision-making process.

41. As legislatives bodies, parliaments are very important for the implementation of the 2030 Agenda and the Goals. The involvement of parliaments is guided by each country's institutional regime and sovereign decisions. Parliaments approve laws and oversee their execution by the Government. They also oversee national policies and strategic plans and approve budgets. In turn, Governments are expected to report back to parliaments, which have at their disposal evaluations and assessments from bodies such as audit institutions. While countries differ in their parliamentary systems, all of them require parliamentary approval on legislation pertaining to the Goals.

42. Chapter 4 of the report makes the distinction between the inclusiveness of institutions and inclusiveness through institutions. The former refers to whether institutions themselves are designed in a way that is conducive to providing inclusive representation and a voice to all sections of society (or all countries). The latter refers to whether institutions, through their actions, directly support or enable more inclusive outcomes. In the case of parliaments, this means examining both how parliaments themselves are inclusive in their representation of all segments of society, including of marginalized groups, and how, when adopting legislation, they take into account the needs of these groups. For example, parliaments are in a unique position to enact legislation to contribute to the elimination of gender-based discriminatory norms and practices, foster women's participation in decision-making processes and ensure equal access to resources, basic services, education, economic resources, land and new technology, all of which are specifically highlighted in the targets of the Goals.

43. In this regard, chapter 4 examines specifically women, indigenous peoples, persons with disabilities, and children and young people. Research reviewed for the report suggests that, while progress has been made with respect to the representation of these groups in national parliaments, gaps still exist. Similarly, while progress has been made in terms of codifying the rights of marginalized groups, there remains a long way to go in this respect, and parliaments will have a key role to play in ensuring that no one is left behind.

Identifying emerging issues for the high-level political forum on sustainable development

44. The identification of new and emerging issues warranting policymakers' attention is a critical function of the science-policy interface. Building on the 2014 and 2015 reports, the 2016 report provides an overview of existing approaches to identify emerging issues for sustainable development.

45. Policymakers are exposed to a broad range of analyses, rankings and advice concerning emerging issues. Consequently, a categorization of existing material, informed by a sustainable development perspective, could contribute to improved

policymaking. The process of identifying emerging issues can be usefully guided by criteria during the "scanning" phase for issues from a range of sources. Criteria can help to make explicit what counts as an emerging issue. The criteria of impact and probability are common starting points in this respect. In addition, criteria such as persistence, irreversibility, ubiquity, novelty and potential for mobilization could also be considered. Priority, a criterion intended to capture an issue's importance in terms of social and cultural norms or impact on already vulnerable and marginalized groups, can accommodate principles such as "ensuring that no one is left behind".

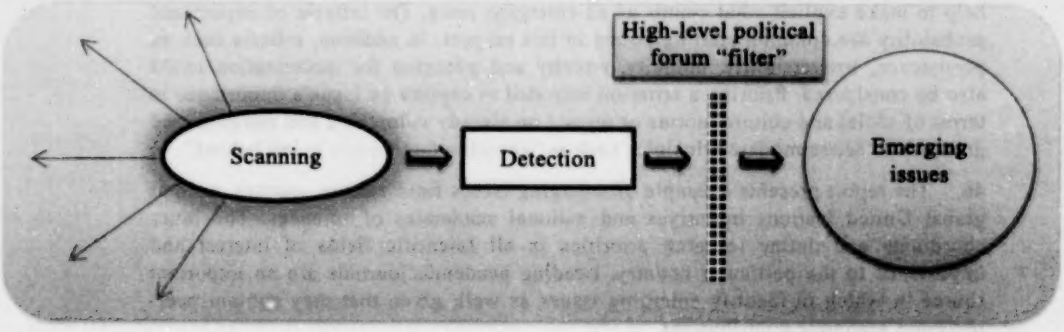
46. The report presents a sample of emerging issues from various sources, such as global United Nations initiatives and national academies of sciences. The latter coordinate and define research priorities in all scientific fields of interest and importance to the particular country. Leading academic journals are an important source in which to identify emerging issues as well, given that they contain peer-reviewed academic contributions.

47. In addition, a crowdsourcing initiative collected short science-policy briefs from scientists and researchers around the world, highlighting a specific issue, finding or piece of research with a bearing on sustainable development policy. The open call for the 2016 report resulted in 62 briefs accepted from all regions, compared with 202 in 2014 and 2015. The briefs received since 2014 cover all the Goals and address many of the linkages among them.

48. Even a guided scanning process for emerging issues is likely to generate a long list of issues for attention. Some form of clustering or categorization of the issues is necessary to facilitate analysis. Several commonly used frameworks were considered for the report. Largely due to its simplicity, the STEEP (social, technological, economic, environmental and political) framework proved to be more suitable than others in enabling an initial categorization of a broad-ranging list of sustainable development issues. However, expert input highlighted the usefulness of taking the additional step of differentiating between issues that relate to values, threats, opportunities, causal mechanisms or responses.

49. While a set of issues may satisfy a number of criteria, a function of the science-policy interface consists of a second step: identifying a smaller subset of policy-relevant issues. In the context of the high-level political forum on sustainable development, this entails identifying emerging issues that are appropriate for policymakers at the global level by filtering out issues of primarily local or national significance. Naturally, there are no neat, clear divides. What is local today can escalate to reach across borders tomorrow. There is room for enhanced dialogue between scientists and policymakers in the high-level political forum in two areas. One is the process by which a large number of issues are filtered to produce a smaller list for consideration by the forum. The second is the substantive contours of the issues that the forum could consider.

Figure II
Schematic representation for identifying emerging issues for the high-level political forum



50. Work done for the report included an attempt to make such a filtering process operational on a pilot basis by actually following the steps of producing a short list of issues that the high-level political forum could consider. This was done through multidisciplinary consultations with experts with knowledge and experience of various processes pertaining to the identification of emerging issues. The exercise involved an initial list of issues, drawn up on the basis of an online survey, which was discussed by experts in a face-to-face meeting. The top-ranking 20 issues resulting from a collective prioritization by scientists cover a broad range of areas, as follows:

(a) Establishing governance mechanisms for the Sustainable Development Goals, from the global (United Nations) level to the regional, national and local levels;

(b) Coping with the increasing impacts of climate change;

(c) Political instability and social unrest from increased income and wealth inequalities;

(d) Ensuring access to affordable, sustainable and reliable modern energy services for all;

(e) Accelerating the implementation of environmentally friendly renewable energy;

(f) The need to develop alternative economic models that decouple economic growth resource use and minimize environmental degradation;

(g) The need to protect and restore ecosystems;

(h) The persistence of poverty globally, including poverty within rich countries;

(i) Strengthening and enhancing the means of implementation and global partnership for sustainable development;

(j) The highly unequal distribution of household wealth across and within nations;

(k) Enhancing social protection and environmental protection in developing countries as a means of reducing inequalities and combating environmental degradation and climate change;

(l) Undertaking an integrated assessment of sustainable development pathways;

(m) Increasing the sustainability, inclusiveness, safety and resilience of cities and human settlements;

(n) The depletion of ocean fish stocks and the exploitation of marine resources;

(o) The time lags of several decades between scientific findings and policy action;

(p) Migration and all forms of movement of people across borders owing to changes in demographics, weather patterns and other factors;

(q) Promoting sustainable industrialization;

(r) The reduction of future agricultural yields owing to climate change, especially in Africa;

(s) Inadequate funding for health systems, especially in developing countries;

(t) Putting in place the blend of governance forms and approaches required for the achievement of the 2030 Agenda.

51. The report demonstrates that a wide range of sources, including documen analysis, crowdsourcing and expert meetings, can usefully be drawn on when identifying emerging issues in the context of sustainable development. The involvement of experts provided a valuable contribution to the discussion, not only in terms of building a list of emerging issues, but in contextualizing the process of issue identification.

52. The report confirms once again the complexity and interdisciplinary nature of sustainable development issues, which involve complex relationships between the economic, social and environmental dimensions. Scientific expertise can shed new light on the complexity and interconnectivity of emerging issues, thus strengthening the science-policy interface and possibly leading to more timely responses to emerging threats or the exploitation of new opportunities.

Taking stock of three editions of the *Global Sustainable Development Report*

53. Member States foresaw that a global sustainable development report would strengthen the science-policy interface for sustainable development at the United Nations Conference on Sustainable Development. Since then, the report series has become a platform and process for involving scientists and experts in United Nations deliberations on sustainable development. It has been open to contributions from all interested United Nations entities, organized science institutions and programmes and individual scientists, the only requirement being that contributions must be grounded in science. To date, 35 United Nations entities and more than 1,000 scientists have contributed. The open call for science-policy briefs alone resulted in 589 scientists from all parts of the world submitting 264 briefs. The

International Council for Science has played a crucial role in encouraging scientific contributions.

54. Taken together, the three editions of the report have contributed to the science-policy interface in two main ways. First, they have provided specific suggestions on how the high-level political forum on sustainable development could make the science-policy interface operational in practice in years to come. Chapter 1 of the 2015 report suggested a range of ways for the forum to enable constructive interactions between science and policymaking at the United Nations. Actions that the forum might consider spanned the space between science and policy, from the provision of policy-relevant data, analysis and information to actions that the forum could take to support enhanced dialogue between science and policy and to the translation of the results of science-policy dialogue into policymaking. All three reports devoted space to the identification of new and emerging issues, including their identification by all areas of science and how existing scanning processes may be combined to provide the forum with a usable list of topics to address.

55. Second, the reports have explored different perspectives on the Goals as an integrated and indivisible set of goals and translated those into chapters that adopted a diversity of focuses and approaches. The 2014 report provided templates for examining the progress made on sustainable development over the long term and for synthesizing insights from sustainable development scenarios contemplated by leading institutions and covering a wide range of thematic areas. This also included the examination of four nexus of issues (climate, land, energy and water; oceans and livelihoods; industrialization and sustainable consumption and production; and infrastructure, inequality and resilience), and cross-cutting issues (disaster risk reduction; innovative data and measurement approaches; and technology). These contributions provide illustrations of how policy-relevant conclusions can be gleaned from scientific assessments.

56. As the report process moves into a new phase after the activities of the high-level political forum on sustainable development in 2016, these specific contributions and the collaboration that has been built with more than 1,000 scientists can provide, along with the experience from other science-policy interfaces, an interesting basis on which to build an ambitious yet actionable multi-year report for the benefit of the forum.